REMARKS

This Office Action Response is submitted in response to the outstanding Office Action, dated June 5, 2008. Claims 1-3, 17-19, 23-25 and 29 are presently pending in the above-identified patent application. Claims 1, 17 and 23 are herein proposed to be amended. Support for the amendments can be found, for example, on page 14, lines 10-12 and page 23, lines 17-19. No new matter is being introduced.

In the outstanding Office Action, the Examiner rejected claims 1, 2, 4, 7-9, 12, 13, 15, 18-20, 23, 24, 26, 29-31, 34, 35, 37, 40-42, and 45-48 are rejected under 35 U.S.C. 101 because the claimed invention is allegedly directed to non-statutory subject matter, and rejected claims 1-3, 17-19, 23-25 and 29 under 35 U.S.C. 103(a) as being unpatentable over Barnhill et al. (United States Patent No. 6,882,990) (hereinafter "Barnhill").

The comments of the Examiner in forming the objection and rejections are acknowledged and have been carefully considered.

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FORMAL REJECTIONS

As mentioned above, the Examiner rejected claims 1, 2, 4, 7-9, 12, 13, 15, 18-20, 23, 24, 26, 29-31, 34, 35, 37, 40-42, and 45-48 are rejected under 35 U.S.C. 101 because the claimed invention is allegedly directed to non-statutory subject matter. Applicants, to begin, respectfully assert that claims 1-3, 17-19, 23-25 and 29 are presently pending in the above-identified patent application, and as a result, it is unclear as to why the Examiner has rejected claims 1, 2, 4, 7-9, 12, 13, 15, 18-20, 23, 24, 26, 29-31, 34, 35, 37, 40-42, and 45-48 herein.

Nonetheless, beginning on page 4 of the Office Action, the Examiner states that

> while the claims may be directed to a product, per se, the computer system and program encompass method steps which are non-statutory and the method run by the product fails to produce a concrete, tangible and useful result. Without an "output" from the system or article of manufacture that is concrete, tangible or useful, such as output only to a user or display, the system and article of manufacture do not meet the statutory requirements.
> It is noted that the embodiment of the claim reciting "outputting said characterization to a user" is statutory and meets the requirement under 35 USC 101.

Applicants respectfully assert that independent claims 1, 17 and 23, as amended herein, overcome this rejection by including the limitation of "outputting said characterization to a user."

Given the above remarks, Applicants respectfully request reconsideration and withdrawal of the rejections of claims 1, 2, 4, 7-9, 12, 13, 15, 18-20, 23, 24, 26, 29-31, 34, 35, 37, 40-42, and 45-48 under 35 U.S.C. §101.

PRIOR ART REJECTIONS

As mentioned above, the Examiner rejected claims 1-3, 17-19, 23-25 and 29 under 35 U.S.C. §103(a) as allegedly being unpatentable over Barnhill. On page 6 of the Office Action, the Examiner stated that

> "preprocessing" of data includes transforming data using a plethora of means, as outlined at column 15, lines 45-67 to column 16, lines 1-19.

Applicants respectfully assert that the amendment to independent claims 1, 17 and 23

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overcome the outstanding rejection by including the limitation of transforming said control data, wherein transforming said control data comprises transforming a probability density distribution for said control data to a uniform probability density for said control data. Support for the amendment can be found, for example, on page 14, lines 10-12 and page 23, lines 17-19 of the specification.

The cited portions of the Barnhill reference do not (nor does any portion of the reference) teach or disclose transforming a probability density distribution for data to a uniform probability density for that data. Rather, as detailed in column 5, lines 17-21 of the Barnhill reference, pre-processing includes

> identifying missing or erroneous data points and taking appropriate steps to correct the flawed data or as appropriate remove the observation or the entire field from the scope of the problem.

Additionally, on page 6 of the Office Action, the Examiner stated that

> [t]rained learning machine algorithms are then applied to "unknowns" to establish patterns in the data (column 10, lines 57-61)....

Applicants respectfully assert that applying an algorithm to "unknowns" to establish patterns does not teach the specific limitation of comparing gene expression patterns of an unknown sample with gene expression patterns that characterize the control data and the phenotype data to classify the unknown sample as similar to either the control data or the phenotype data or neither, as included in independent claims 1, 17 and 23. Such a limitation is not explicitly disclosed in the Barnhill reference. "All words in a claim must be considered in judging the patentability of that claim against the prior art." *In re Wilson*, 424 F.2d 1382, 1385, 165 USPQ 494, 496 (CCPA 1970).

If an independent claim is nonobvious under 35 U.S.C. 103, then any claim depending therefrom is nonobvious. *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988). Given the above remarks, Applicants respectfully request reconsideration and withdrawal of the rejections of claims 1-3, 17-19, 23-25 and 29 under 35 U.S.C. §103(a).

In view of the foregoing, Applicants submit that all of the pending claims, i.e., claims 1-

3, 17-19, 23-25 and 29, are in condition for allowance and such favorable action is earnestly solicited.

If any outstanding issues remain, or if the Examiner has any further suggestions for expediting allowance of this application, the Examiner is invited to contact the undersigned at the telephone number indicated below.

The Examiner's attention to this matter is appreciated.

Respectfully submitted,

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Michael J. Cooper
Attorney for Applicant(s)
Reg. No. 57,749
Ryan, Mason & Lewis, LLP
1300 Post Road, Suite 205
Fairfield, CT 06824
(203) 255-6560